NEC
NEC Electronics Inc.

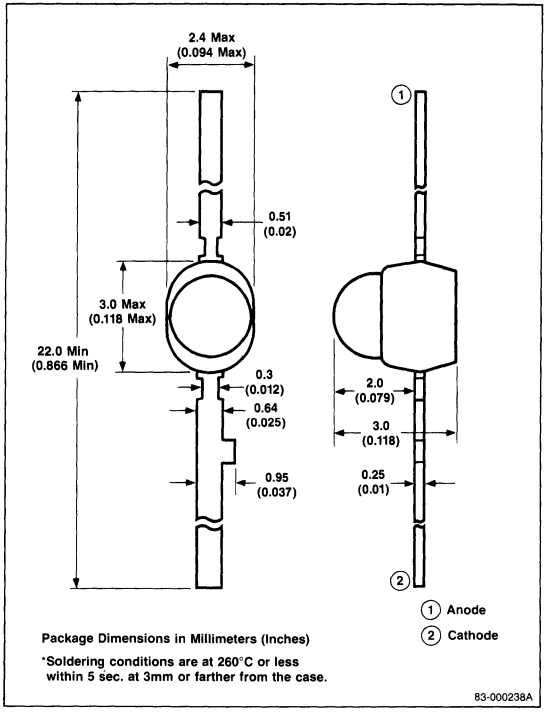
SE302A
GaAs INFRARED EMITTING DIODE INDUSTRIAL USE

NEPCO SERIES

Description

The SE302A is a GaAs (Gallium Arsenide) infrared emitting diode which is mounted on a lead frame and molded in a clear plastic lens. On forward bias, it emits a spectrally narrow band of radiation peaking at 940nm. The close wavelength match of this device to silicon sensors makes it ideally suited for all source-sense applications. Its low cost and volume producibility open new areas of use anywhere an infrared source is desirable.

Package Dimensions



Package Dimensions in Millimeters (Inches)

*Soldering conditions are at 260°C or less within 5 sec. at 3mm or farther from the case.

83-000238A

Features

- ☐ Low cost
- ☐ High output power
- ☐ Fast switching time
- ☐ Long life, solid state reliability
- ☐ Compact, rugged, lightweight
- ☐ Spectrally matched to silicon sensors (Good compatibility with Darlington photo transistor (PH101))
- ☐ Easily assembled in linear arrays
- ☐ Compatible with integrated circuits

Applications

- ☐ Electro optical switches
- ☐ Card and tape reader sources
- ☐ Optical encoders
- ☐ Photo choppers, isolator
- ☐ High speed optoelectronic data links
- ☐ Photo coupler

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Absolute Maximum Ratings

T_A = +25°C

Power Dissipation, P_D	75mW
Forward Current, I_F	50mA
Reverse Voltage, V_R	3.0V
Junction Temperature, T_J	+80°C
Storage Temperature, T_{STG}	−30°C ~ +80°C

Electro-Optical Characteristics

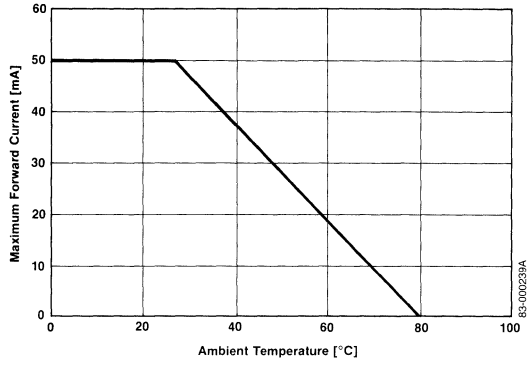
T_A = +25°C

Parameters	Symbol	Limits Min	Typ	Max	Unit	Test Conditions
Forward Voltage	V_F		1.2	1.4	V	I_F = 50mA
Reverse Current	I_R			5.0	μV	V_R = 3.0V
Capacitance	C		100		pF	V = 0, f = 1.0MHz
Peak Emission Wavelength	λ_{PEAK}		940		nm	I_F = 50mA
Spectral Line Half Width	$\Delta\lambda$		60		nm	I_F = 50mA
Output Power	P_O	1.0	1.5		mW	I_F = 50mA
Light Turn-On and Turn-Off	t_{ON}, t_{OFF}		1.0		μs	

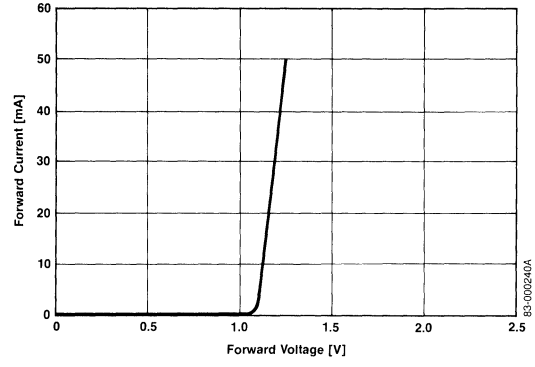
Typical Characteristics

T_A = +25°C

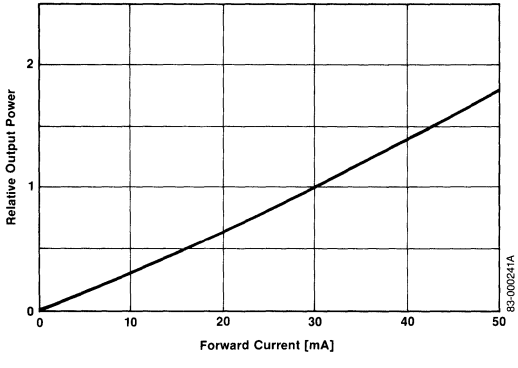
Maximum Forward Current vs Ambient Temperature



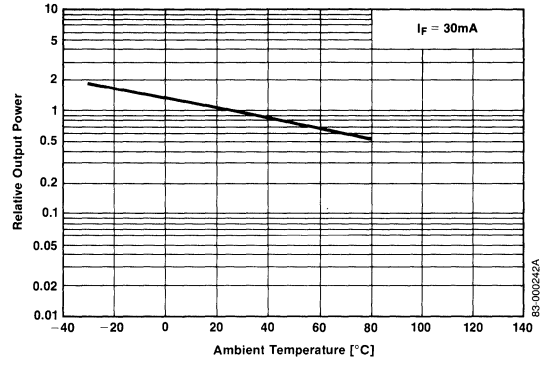
Forward Current vs Forward Voltage



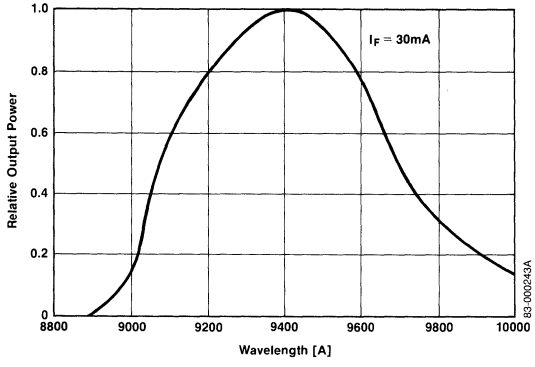
Relative Output Power vs Forward Current



Relative Output Power vs Ambient Temperature



Spectral Distribution



Spatial Distribution